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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,681	09/27/2001	Ray M. Richardson	INTL-0607-US (P11748)	2831
21906	7590	03/15/2006	EXAMINER	
TROP PRUNER & HU, PC 8554 KATY FREEWAY SUITE 100 HOUSTON, TX 77024			SORRELL, ERON J	
			ART UNIT	PAPER NUMBER
			2182	

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/964,681	Applicant(s) RICHARDSON, RAY M.	
	Examiner Eron J. Sorrell	Art Unit 2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9-16, 19-26 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-16, 21-26 and 31-36 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 19, 20, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/14/05 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1,2,11,12,21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon et al. (U.S. Patent No. 6,754,732 hereinafter "Dixon") in view of *C++ How to Program* by Deitel and Deitel hereinafter "Deitel").

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4. Referring to method claims 1 and 2, and computer readable medium claim 11 and 12, and system claims 21 and 22, Dixon teaches a method and system comprising:

a processor (see paragraph bridging columns 7 and 8); and
a storage coupled to the processor to store instructions that enable the processor to (see queue management software in paragraph bridging columns 7 and 8):

initiating a direct memory access (see lines 17-37 of column 10); and

successively transferring data from the circular buffer in a first processor system to the circular buffer in a second processor system (see figure 9 and lines 17-37 of column 10, note the circular buffer is comprised of a plurality of storage buffers, this is further evidenced by item 1208 in figure 12A wherein the successive transfer is illustrated by a loop when the source length is not equal to zero).

Dixon fails to explicitly set forth the limitations that the circular buffers are linked buffers arranged in a linked list, however Dixon does teach the buffers being circular and teaches that methods for implementing circular buffers are well known in the art (see lines 16-45 of column 4).

Deitel teaches circular buffers implemented as linked buffers arranged as linked lists (see paragraphs 3-5 of page 810

and figure 15.8, note each "node" comprises a buffer for storing a data value and a pointer linking the node to another node).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method and system of Dixon with the above teachings Deitel such that the circular buffers are linked. One of ordinary skill in the art would have been motivated to make such modification because use of linked lists allow dynamic implantation of circular buffers that may grow or shrink according to the needs of the system.

5. Claims 3,4,13,14,23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon in view of Deitel as applied to claims 1,11, and 21 above, and further in view of Leger et al. (U.S. Patent No. 5,781,799 hereinafter "Leger").

6. Referring to method claims 3 and 4, computer readable medium claims 13 and 14, and system claims 23 and 24, the combination of Dixon and Deitel fails to teach, providing the linked list with descriptors that indicate the status of each of the buffers, wherein the descriptors have flags that indicate whether a corresponding buffer is empty or full.

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Leger teaches in an analogous system, providing a linked list (see lines 51-60 of column 11 wherein Leger discloses buffer chaining) with descriptors that indicate the status of the buffers wherein the descriptors have flags that indicate whether a corresponding buffer is empty or full (see paragraph bridging columns 4 and 5).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Dixon and Deitel with the above teachings of Leger. One of ordinary skill in the art at the time of the applicant's invention would have been motivated to make such modification in order to permit the use of non-contiguous data blocks as suggested by Leger (see lines 10-20 of column 3).

7. Claims 5,6,15,16,25,26,32,34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon in view of Deitel as applied to claims 1,11, and 21 and further in view of Mecklai et al. (U.S. Patent No. 6,412,029).

8. Referring to method claims 5,6, and 32, article claims 15,16, and 34, and system claims 25,26, and 36, Dixon fails to teach transferring data between buffers in a cellular telephone, wherein the first processing system includes a baseband

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processor and the second processor system includes a multimedia processor of the cellular phone, wherein the transferring comprises successively transferring the data directly from the first processor system to the second processor system via an internal bus of the wireless system.

Mecklai teaches, in an analogous system, the above limitation (see figure 2 and paragraph bridging columns 2 and 3).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to replace the data transfer method of Mecklai with the data transfer method taught by Dixon. One of ordinary skill would have been motivated to make such modification in order to transfer data using a more efficient DMA technique as suggested by Dixon (see lines 29-35 of column 5 of Dixon).

9. Claims 31, 33, and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon in view of Deitel as applied to claims 1, 11, and 21 above and further in view of "Developing Software in Assembly Language - First In First Out Queue" by Valvano, Jonathan (hereinafter "Valvano").

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10. Referring to claims 31,33, and 35, the combination of Dixon and Deitel fails to explicitly set forth the limitations of transferring the data via a first-in first-out (FIFO) buffer in the first processing system directly to a FIFO buffer in the second processor system.

Valvano teaches FIFO buffers are useful for data flow problem and is a very common data structure used of I/O interfacing (see first full paragraph on page 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method and system of Dixon with the above teachings of Valvano in order to manage any data flow problems as suggested by Valvano.

Allowable Subject Matter

11. Claims 9,10,19,20,29, and 30 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest alone or in combination, generating an

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interrupt when one of the linked buffers is empty (or full), based on a flag associated with a descriptor for one of the linked buffers, intercepting the interrupt and automatically filling (or emptying) the one of the linked buffers.

Response to Arguments

13. Applicant's arguments with respect to claims 1, 2, and 21 have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant's argument that the combination of Dixon and Deitel fails to teach successive data transfer is not persuasive.

Dixon teaches at lines 16-37 of column 13, a byte of data is continually transferred until the entire length of data is transferred (i.e. 50 bytes) this is further evidenced by item 1208 in figure 12A wherein the successive transfer is illustrated by a loop when the source length is not equal to zero.

15. Applicant's argument that the combination of Dixon, Deitel, and Mecklai is improper because the examiner relies on hindsight

as motivation to combine the teachings of Mecklai is not persuasive.

Dixon teaches a method and system for enhanced DMA operations using circular buffers. Mecklai teaches a system wherein data is transferred via DMA from one processor to another processor using buffers. It would have been obvious to utilize the enhanced DMA techniques disclosed by Dixon in the system of Mecklai to provide for more efficient data transfer as suggested by Dixon (see lines 29-35 of column 5 of Dixon).

16. Applicant's arguments see last paragraph of page 8, filed 12/14/05, with respect to claims 9,10,19,20,29, and 30 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

Conclusion

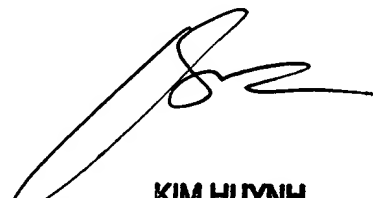
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J. Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be

reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJS
March 11, 2006



KIM HUYNH
SUPERVISORY PATENT EXAMINER
3/13/06